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MFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 12

	Complete if Known
Application Number	09/766,253
Filing Date	January 19, 2001
First Named Inventor	Thomas Cech
Art Unit	1634
Examiner Name	Carla J. Myers
Attorney Docket Number	015389-002921US

U.S. PATENT DOCUMENTS+							
	Document Number						
Examiner Initials*	Cite No. ¹	Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear		
CH	A1	US-3,817,837	06-18-1974	Tanenholtz et al.			
_	A2	US-3,850,752	11-26-1974	Schuurs et al.			
	A3	US-3,939,350	02-17-1976	Kronick et al.			
	A4	US-3,996,345	12-01-1976	Ullman et al.			
	A5	US-4,275,149	06-23-1981	Litman et al.			
	A6	US-4,277,437	07-07-1981	Maggio			
	A7	US-4,366,241	12-28-1982	Tom et al.			
	A8	US-4,683,195	07-28-1987	Mullis et al.			
	A9	US-4,683,202	07-28-1987	Mullis			
	A10	US-4,816,567	03-28-1989	Cabilly et al.			
	A11	US-4,965,188	10-23-1990	Mullis et al.			
	A12	US-5,489,508	02-06-1996	West et al.			
	A13	US-5,583,016	12-10-1998	Villeponteau et al.			
	A14	US-5,597,697	01-28-1997	Diamond			
	A15	US-5,747,317	05-05-1998	Cao			
	A16	US-5,770,422	06-23-1998	Collins			
	A17	US-5,917,025	06-29-1999	Collins			
	A18	US-5,919,656	07-06-1999	Hamington, et al.			
	A19	US-6,093,809	07-25-2000	Cech et al.			
	A20	US-6,166,178	12-26-2000	Cech et al.			
	A21	US-6,258,535 B1	07-10-2001	Villeponteau et al.			
	A22	US-6,261,556 B1	07-17-2001	Weinrich et al.			
	A23	US-6,261,836 B1	07-17-2001	Cech et al.			
	A24	US-6,309,867 B1	10-30-2001	Cech et al.			
	A25	US-6,337,200 B1	01-08-2002	Morin			
	A26	US-6,440,735 B1	08-27-2002	Gaeta			
	A27	US-6,444,650 B1	09-03-2003	Cech et al.			
	A28	US-6,475,789 B1	11-05-2002	Cech et al.			
T	A29	US-6,517,834 B1	02-11-2003	Weinrich et al.			
	A30	US-6,608,188 B1	08-19-2003	Tsuchiya et al.			
_	A31	US-6,610,839 B1	08-26-2003	Morin et al.			
	A32	US-6,617,110 B1	09-09-2003	Cech et al.			
	A33	US-6,627,619 B2	09-30-2003	Cech et al.			
	A34	US 2002-0164786 A1	11-07-2002	Cech et al.			
7	A35	US 2003-0009019 A1	01-09-2003	Cech et al.			
ĺ	A36	US 2003-0032075 A1	02-13-2003	Cech et al.			
h	A37	US 2003-0044953 A1	03-06-2003	Cech et al.			
j	A38	US 2003-0059787 A1	03-27-2003	Cech et al.			
	A39	US 2003-0096344 A1	05-22-2003	Cech et al.			
क्ष	A40	US 2003-0100093 A1	05-29-2003	Cech et al.			
	A41	US Application No. 99/432,593		Cech et al.			

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INFORMATION DISCLOSURE
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of 12

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Attorney Docket Number	015389-002921US	

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CI	A42	U.S. Application No. 09/721,477		Cech et al.		
Q1-	A43	U.S. Application No. 09/721,508		Cech et al.		
Ch	A44	U.S. Application No. 90/974,584		Cech et al.	. 10	

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$\overline{}$	1	レ B1	GB	2317891	Α	04-08-1998			
1	i	/ B2	JP	9154575	A2	06-17-1997			Σ
	Ü	B3	PCT	WO 84/03564	A1	09-13-1984] [
	· /	B4	PCT	WO 93/23572	A1	11-25-1993] [
	V	B5	PCT	WO 94/17210	A1	08-04-1994] [
	7	B6	PCT	WO 95/13382	A1	05-18-1995] [
	L	B7	PCT	WO 96/01835	A1	01-25-1996			
	·	B8	PCT	WO 96/12811	A1	05-02-1996			
	1	B9	PCT	WO 96/19580	A2	06-27-1996			
	./	B10	PCT	WO 96/40868	A1	12-19-1996			
	./	B11	PCT	WO 98/01542	A1	01-15-1998			<u> </u>
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	J	B14	PCT	WO 98/08938	A1	03-05-1998			
	V	B15	PCT	WO 98/14592	A2	04-09-1998			
	V	B16	PCT	WO 98/14593	A2	04-09-1998			
	1	B17	PCT	WO 98/21343	A1	05-22-1998			
	Y.	B18	PCT	WO 98/23759	A2	06-04-1998			ן נ
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	11	B20	PCT	WO 98/45450	A1	10-15-1998		<u> </u>	
	1	B21	PCT	WO 98/59040	A2	12-30-1998			ַ ַ
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	1	B24	PCT	WO 99/38964	A2	08-05-1999			ַ
	7	B25	PCT	WO 00/46355	A2	08-10-2000			

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Art Unit	1634				
Examiner Name	Carla J. Myers				
Attorney Docket Number	015389-002921US				

		NON PATENT LITERATURE DOCUMENTS	
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Con	C1	ADAMSON, D. et al. "Significant Telomere Shortening in Childhood Leukemia", Cancer Genet. Cytogenet, 1992; pp. 204-206, Vol. 61	
٥	C2	ANDERSON and YOUNG, "Quantitative Filter Hybridization" in Nucleic Acid Hybridization, 1985, pp. 73-111	
-	СЗ	AUSUBEL et al., Current Protocols in Molecular Biology, 1989, John Wiley & Sons, New York NY	
0	C4	AUTEXIER et al., "Reconstitution of human telomerase activity and identification of a minimal functional region of the human telomerase RNA," EMBO J, 1996, pp. 5928-5935, Vol. 15	
V	C5	AUTEXIER, CHANTAL, et al., "Telomerase and cancer: revisiting the telomere hypothesis; Trends in Biochemical Sciences, 1996, pp. 387-391, Vol. 10, No. 21.	
V	C6	AUXEXIER and GREIDER, "Functional reconstitution of wild-type and mutant Tetrahymena telomerase," Genes Develop., 1994, pp. 563, Vol. 8	
V	C 7	AVILION, A., "Characterization and expression of human telomerase," Dissertation Abstracts International", 1996, pp. 5930-B, Vol. 56, No. 11	
-	C8	BARINGA, MARCIA, "The Telomerase Picture Fills In", Science, April 25, 1997; pp. 528-529, Vol. 276	
V	C9	BERGER and KIMMEL (Eds), "Guide to Molecular Cloning Techniques", Methods in Enzymology, 1987, vol. 152, Academic Press, San Diego CA	
1	C10	BIESSMAN et al., "Addition of Telomere-Associated HeT DNA Sequences "Heals" Broken Chromosome End s in Drosophila," Cell, 1990, pp. 663, Vol. 61	
V	C11	BITTER, G. et al., "Expression and secretion vectors for yeast," <i>Methods in Enzymology</i> , 1987, pp. 516-544, Vol. 153, Academic Press, Inc.	
1	C12	BLACKBURN and CHIOU, "Non-nucleosomal packaging of a tandemly repeated DNA sequence at termini of extrachromosomal DNA coding for rRNA in Tetrahymena," Proc. Natl. Acad. Sci., 1981, pp. 2263, Vol. 78	
V	C13	BLACKBURN and GALL, "A tandemly repeated sequence at the termini of the extrachromosomal ribosomal RNA genes in Tetrahymena, "J. Mol. Biol., 1978, pp. 33, Vol. 120	
1	C14	BLACKBURN, "Telomerases," Ann. Rev. Biochem., 1992, pp. 113, Vol. 61	
1	C15	BRADFORD, "A Rapid and Sensitive Method for the Quantitation of Microgram Quantities of Protein Utilizing the Principle of Protein-Dye Binding," Anal. Biochem., 1976. pp. 248, Vol. 72	
1	C16	BRAUNSTEIN et al., "Transcriptional silencing in yeast is associated with reduced nucleosome acetylation," Genes Develop., 1993, pp. 592, Vol. 7	
i	C17	CALVIO et al., "Identification of hnRNP P2 as TLS/FUS using electrospray mass spectrometry," RNA, 1995, pp. 724, Vol. 1	

Examiner Signature	Date Considered 4-13-04
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PTO/SB/08B (08-03) Substigue or 1990 1449B/PTO Complete if Known Application Number 09/766,253 ATION DISCLOSURE Filing Date January 19, 2001 STATÉMENT BY APPLICANT First Named Inventor **Thomas Cech** Art Unit 1634 (use as many sheets as necessary) Examiner Name Carla J. Myers 015389-002921US Attorney Docket Number of | 12 Sheet

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	т
Onr	C18	CARUTHERS et al., "New chemical methods for synthesizing polynucleotides," Nucleic Acids Res. Symp. Ser., 1980, pp. 215-223	
V	C19	CHAN and TYE, "Organization of DNA sequences and replication origins at yeat telomeres, " Cell, 1983. p. 563, Vot. 33	
i	C20	CHIU, et al. "Replicative senescence and cell immortality: the role of telomeres and telomerase", <i>Proc. Soc. Exp. Bio. Med.</i> , 1997, p. 99, Vol. 214.	
V	C21	CHONG, L. et al. "A Human Telomeric Protein", Science, Dec. 1995, pp. 1663-1667, Vol. 270.	
i	C22	COLBERE-GARAPIN et al., "A new dominant hybrid selective marker for higher eukaryotic cells," J. Mol. Biol., July 1981, pp. 1-14, Vol. 150, No. 1	
v	C23	COLE et al., "The EBV-hybridoma technique and its application to human lung cancer," Monoclonal Antibodies and Cancer Therapy, 1985, pp. 77-96, Alan R. Liss Inc., New York NY.	
1	C24	COLEMAN HEALY, K. "Telomere dynamics and telomerase activation in tumor progression: prospects for prognosis and therapy" Oncol. Res., 1995, pp. 121-130, Vol. 7	
V	C25	COLLINS et al., "Purification of Tetrahymena telomerase and cloning of genes encoding the two peotein components of the enzyme," Cell, 1995, pp. 677-686, Vol. 81	
1	C26	COLLINS, KATHLEEN, "Structure and function of telomerase", Current Opinion in Cell Biology, 1996, pp. 374-380, Vol. 8	
V	C27	CONRAD et al. "RAP1 protein interacts with yeast telomers in vivo: Overproduction alters telomere structure and decreases chromosome stability," Cell, 1990, pp. 739, Vol. 63.	
v	C28	COOMBS, Dictionary of Biotechnology, 1994, Stockton Press, New York NY	
i	C29	COTE et al., "Generation of human monoclonal antibodies reactive with cellular antigens, " Proc. Natl. Acad. Sci., 1983, pp. 2026, Vol. 80.	
V	C30	COUNTER et al., "The catalytic subunit of yeast telomerase," Proc. Natl. Acad. Sci. U.S.A., 1997, 9202-9207, Vol. 94.	
V	C31	COUNTER et al.; "Telomerase Activity in Normal Leukocytes and in Hematological Malignancies"; Blood; May 1, 1995; pp. 2315-2320, Vol. 85	
ν	C32	COUNTER et al.; "Telomere shortening associated with chromosome instability is arrested in immortal cells which express telomerase activity" <i>The EMBO Journal</i> ; 1992; Vol. 11; No. 5, pp. 1921-1929	
1	C33	COUNTER et al; "Telomerase activity in human ovarian carcinoma"; <i>Proc. Natl. Acad. Sci USA</i> ; April 1994; Vol. 91; pp. 2900-2904	
	C34	CREIGHTON, T. Proteins, Structures and Molecular Principles, 1983, WH Freeman and Co, New York, NY	

Examiner Signature	Callo Myris	Date Considered	4-13-04

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CHL	C35	DE LANGE, et al.; Structure and Variability of Human Chromosome Ends; Molecular and Cellular Biology; February 1990; Vol. 10, No. 2; pp. 518-527	
(0	C36	DIEFFENBACH and DVEKSLER, PCR Primer, a Laboratory Manual, 1995, Cold Spring Harbor Press, Plainview NY	
V	C37	DUPLAA et al., "Quantitative analysis of polymerase chain reaction products using biotinylated dUTP incorporation," Anal. Biochem., 1993, p. 229, Vol. 212	
V	C38	FANG,G. et al., "Oxytricha telomere-binding protein: separable DNA-binding and dimerization domains of the a -subunit," Genes and Development, 1993, pp.870-882, Vol. 7	
L	C39	FENG et al., "The RNA Componant of Human Telomerase," Science, 1995, pp. 1236-1241, Vol. 269	
r	C40	FLAVELL, R. & MATHIAS, R. "Prospects for transforming monocot crop plants", Nature, 12 Jan. 1984, pp. 108-109, Vol. 307.	
V	C41	FRESHNEY, Culture of Animal Cells, A Manual Basic Technique, 1983, Alan R. Liss, Inc. New York.	
V	C42	Genbank Accession No. A46242 (NATARAJAN et al.) 1992	
V	C43	Genbank Accession No. AA299878 (ADAMS et al.) April 18, 1997	
Ü	C44	Genbank Accession No. AA311750 (ADAMS et al.) April 19, 1997	
ν	C45	Genbank Accession No. L38903 (ZAHNER et al.) July 26, 1996	
J	C46	Genbank Accession No. Q06163 (DU, Z.) 1995	
ν	C47	Genbank Accession No. S39696 (GLASER et al.) 1993	
. 2	C48	Genbank Accession No. S53396, (DU, Z.) 1995	
J	C49	GenBank Accession No. U95964, (Linger et al.) May 5, 1997	
v	C50	GenBank, EST Database, Accession No. W70315, (HILLIER, et al.) October 17, 1996	
1	C51	Genome Issue of Science, 1994, pp. 1981-2144, Vol.265.	
J	C48 C49 C50	Genbank Accession No. S53396, (DU, Z.) 1995 GenBank Accession No. U95964, (Linger et al.) May 5, 1997 GenBank, EST Database, Accession No. W70315, (HILLIER, et al.) October 17, 1996	

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Opi	C52	GILLEY, D. et al., "Altering specific telomerase RNA template residues affects active site function," Genes Develop., 1995, pp. 2214-2226, Vol. 9, Cold Spring Harbor Laboratory Press.	
1	C53	GLASER, P. et al. "Bacillus subtilis genome project: cloning and sequencing of the 97 kb region from 325° to 333°" Molecular Microbiology, 1993, pp. 371-384, Vol. 10, No. 2.	
i	C54	GOODMAN, R. et al. "Gene Transfer in Crop Improvement", Science, 3 April 1987, pp. 48-54, Vol. 236.	
V	C55	GOTTSCHLING, D. and CECH, T. "Chromatin Structure of the Molecular Ends of Oxytricha Mononuclear DNA: Phased Nucleosomes and a Telomeric Complex," Cell, Sept. 1984, pp. 501-510, Vol. 38	
1	C56	GOTTSCHLING. D. and ZAKIAN, V. "Telomere proteins: specific recognition and protection of the natural termini of Oxytricha macronuclear DNA," Cell, 1986, pp. 195-205, Vol. 47	
i	C57	GRAY, J.T. et al., "Cloning and expression of genes for the Oxytricha telomere-binding protein specific subunit interactions in the telomeric complex," Cell, 1991, pp.807-814, Vol. 67.	
i	C58	GREENWOOD, S. et al., "Phylogenetic relationships within the class oligohymenophorea, phylum ciliophora, inferred from the complete small subunit rRNA gene sequences of Colpidium campylum, Glaucoma chattoni, and Opisthonecta henneguyi," J. Mol. Evol., 1991, pp. 163-174, Vol. 33	
2	C59	GREIDER, C. "Telomerase is processive, " Mol. Cell. Biol., Sept. 1991, p. 4572-4580, Vol. 11	
1	C60	GREIDER, C. "Telomere Length Regulation," Ann. Rev. Biochem., 1996, pp. 337-365, Vol. 65, Cold Springs Harbor Laboratory Press, New York.	
1	C61	GREIDER, C. "Telomeres, Telomerase and Senescence"; BioEssays; 1990; pp. 363-369, Vol. 12, No. 8.	
1	C62	GREIDER, C. and BLACKBURN, E. "A telomeric sequence in the RNA of Tetrahymena telomerase required for telomere repeat synthesis," Nature, Jan. 1989, pp. 331-337, Vol. 337	
1	C63	GREIDER, C. and BLACKBURN, E. "Identification of a specific telomere terminal transferase activity in Tetrahymena extracts," Cell, Dec. 1985, 405-413, Vol. 43	
-	C64	HAMPTON et al. Serological Methods a Laboratory Manual, 1990, APS Press, St Paul MN	
J	C65	HARLEY, C. "Telomere loss: Mitotic clock or genetic time bomb?" Mutation Research; 1991; pp. 271-282, Vol. 256, Elsevier Science Publishers.	
1	C66	HARLEY, C. & VILLEPONTEAU, B. "Telomeres and telomerase in aging and cancer" Current Opinion in Genetics and Development; 1995, pp. 249-255, Vol. 5.	
CH	C67	HARLEY, C. et al. "Telomeres shorten during ageing of human fibroblasts", Nature, 31 May 1990; pp. 458-460, Vol. 345.	

Examiner Signature	Cruxil	Date Considered	4.13.04

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Chi	C68	HARRINGTON et al., "A Mammalian Telomerase-Associated Protein," Science, Feb. 1997, pp. 973-977, Vol. 275	
/	C69	HARRINGTON et al., "Human telomerase contains evolutionarily conserved catalytic and structural subunits," Genes Dev., 1997, pp. 3109-3115, Vol. 11.	
J	C70	HARTMAN, S. & MULLIGAN, R. "Two dominant-acting selectable markers for gene transfer studies in mammalian cells," Proc. Natl. Acad. Sci., 1988, pp. 8047, Vol. 85.	
1	C71	HASTIE, N. et al. "Telomere reduction in human colorectal carcinoma and with ageing", Nature, 30 August 1990, pp. 866-868, Vol. 346.	
/	C72	HENDERSON, C. Cancer genetics gene regulates telomerase resulting in death of cancer cells; Gene Therapy Weekly;11 September 1995, Abstract Only.	
1	C73	HENDERSON, E. and BLACKBURN, E. "An overhanging 3' terminus is a conserved feature of telomeres," Mol Cell. Biol., Jan. 1989, p. 345-348, Vol. 9, No. 1.	
1	C74	HIYAMA, E. et. al. "Correlating telomerase activity levels with human neuroblastoma outcomes"; Nature Medicine; 3 March 1995; pp. 249-255, Vol. 1, No. 3.	
J	C75	HOLTZMANN, K. et al. "Telomeric Associations and Loss of Telomeric DNA Repeats in Renal Tumors", Genes, Chromosomes & Cancer, 1993, pp. 178-181, Vol. 6.	
1	C76	HORN, T. et al., "Synthesis of oligonucleotides on cellulose. Part II: design and synthetic strategy to the synthesis of 22 oligodeoxynucleotides coding for gastric inhibitory polypeptide (GIP)," Nucleic Acids Res. Symp. Ser. No. 7, 1980, pp. 225-232	
J	C77	HUDSON et al., "An STS-based map of the human genome," Science, 1995, p. 1945, Vol. 270	L
J	C78	HUSE, W. et al., "Generation of a large combinatorial library of the immunoglobulin repertoire in phage lambda," Science, 1989, p. 1275-1281, Vol. 246	
1	C79	JÄHNE, A. et al. "Genetic Engineering of Cereal Crop Plants: A Review", Euphytica, 1995, pp. 35-44, Vol. 85, Kluwer Academic Publishers, Netherlands.	
1	C80	JOHNSON, P. et al., "Expression of Wild-Type p53 Is Not Compatible with Continued Growth of p53-Negative Tumor Cells", <i>Molecular and Cellular Biology</i> , Jan. 1991, p. 1-11, Vol. 11, No. 1.	
U	C81	JOLLIFFE, L.K. "Humanized antibodies: enhancing therapeutic utility through antibody engineering", Int. Rev. Immunol., 1993, pp. 241-250, Vol. 10	
./	C82	KILIAN, A. et al., "Isolation of a candidate human telomerase catalytic subunit gene, which reveals complex splicing patterns in different cell types," <i>Hum. Mol. Genet.</i> , 1997, pp. 2011-2019, Vol. 6, No. 12.	
j	C83	KIM, N. et al. "Specific Association of Human Telomerase Activity with Immortal Cells and Cancer", Science, 23 December 1994, pp. 2011-2014, Vol. 266.	

Examiner Signature	Ouzers	Date Considered	4-19-04

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STATEMENT BY APPLICANT

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of 12

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Application Number	09/766,253			
Filing Date	January 19, 2001			
First Named Inventor	Thomas Cech			
Art Unit	1634			
Examiner Name	Carla J. Myers			
Attorney Docket Number	015389-002921US			

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	τ,
CM	C84	KIPLING and COOKE, "Hypervariable ultra-long telomeres in mice," Nature, 1990, p. 400, Vol. 347	
V	C85	KLINGELHUTZ, A. et al. "Restoration of Telomeres in Human Papillomavirus- Immortalized Human Anogenital Epithelial Cells"; Molecular and Cellular Biology; Feb. 1994, pp. 961-969, Vol. 14, No. 2.	
	C86	KLOBUTCHER et al., "All gene-sized DNA molecules in four species of hypotrichs have the same terminal sequence and an unusual 3' terminus," Proc. Natl. Acad. Sci., 1981, p. 3015, Vol. 78	
1	C87	KOEHLER and MILSTEIN, "Continuous cultures of fused cells secreting antibody of predefined specificity," <i>Nature</i> , 1975, pp. 495-497, Vol. 256.	
V	C88	KOZBOR, D. & RODER, J. "The production of monoclonal antibodies from human lymphocytes," Immunol. Today, 1983, p. 72, Vol. 4.	
Ú	C89	LAMOND, A. and SPROAT, B. "Isolation and Characterization of Ribonucleoprotein Complexes", RNA Processing Vol. 1 A Practical Approach, 1994, pp. 103-140, Eds. Higgins & Harnes, Oxford University Press, New York.	
1	C90	LAMOND, A. et al. "Probing the structure and function of U2 snRNP with antisense oligonucleotides made of 2'-OMe RNA," Cell, July 1989, pp. 383-390, Vol. 58.	
V	C91	LENDVAY, T. et al., "Senescence mutants of Saccharomyces cerevisiae with a defect in telomere replication identify three additional EST genes," Genetics, Dec. 1996, pp. 1399-1412, Vol. 144	
1	C92	LEWIS, A. & CROWE, J.S. "Generation of humanized monoclonal antibodies by 'best fit' framework selection and recombinant polymerase chain reaction", Year Immunol., 1993, pp. 110-118, Vol. 7	
1	C93	LINGNER et al., "Telomerase RNAs of different ciliates have a common secondary structure and a permuted template, " Genes Develop., 1994, p. 1984, Vol. 8	
V	C94	LINGNER et al., "Purification of telomerase from Euplotes adeiculatus: requirement of a primer 3' overhang," <i>Proc. Natl. Acad. Sci.</i> , 1996, pp. 10712-10717, Vol. 93.	
1	C95	LINGNER et al., "Reverse transcriptase motifs in the catalytic subunit of telomerase," Science, April 25, 1997; pp. 561-567, Vol. 276.	
1	C96	LINGNER et al., "Telomerase and DNA End Replication: No Longer a Lagging Strand Problem?," Science, 1995, p. 1533, Vol. 269	
1	C97	Linking telomerase and tumors; Genesis Report- Dx; 1995; Vol. 4, No. 6; Publisher Genesis Group Associates, Abstract only.	
V	C98	LOWY, I. et al. "Isolation of transforming DNA: Cloning the hamster aprt gene," <i>Cell</i> , Dec. 1980, p. 817-823, Vol. 22.	
1/	C99	LUNDBLAD, V. & BLACKBURN, E., Letter to the Editor entitled, "RNA-Dependent Polymerase Motifs in EST1: Tentative Identification of a Protein Component of an Essential Yeast Telomerase", Cell, 23 Feb. 1990, pp. 529-530, Vol. 60.	

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xaminer	Cite	NON PATENT LITERAT Include name of the author (in CAPITAL LETTI (book, magazine, journal, serial, symposium	ERS), title of the art , catalog, etc.), date	icle (when appropriate), title of the item e, page(s), volume-issue number(s),	Т
Initials No. publisher, city and LUNDBLAD, V. & BLACKBURN, E., Letter to in EST1: Tentative Identification of a Protein Feb. 1990, pp. 529-530, Vol. 60.		d/or country where partitled, Component of an E	"RNA-Dependent Polymerase Motifs		
10	C101	LUSTIG, A. & PETES, T. "Identification of yea Acad. Sci., March 1986, pp. 1398-1402, Vol. 8	st mutants with all	ered telomere structure," Proc. Natl.	
1	C102		of telomerase subunits: catalysing telomere research",		
1	C103	MADDOX, D.E. et al. "Elevated serum levels i similar to eosinophil granule major basic prote	in human pregnan ein," J. Exp. Med.,	cy of a molecule immunochemically Oct. 1983, pp. 1211-1226, Vol. 158	
1	C104	MAKAROV, V. et al. "Nucleosomal Organizati p. 775-787, Vol. 73	on of Telomere-Sp	pecific Chromatin in Rat," Cell, 1993,	
1	C105	MALICKI, J. et al. "A human HOX4B regulator Drosophila embryos", Nature, 23 July 1992, p	ry element provide p. 345-357, Vol. 3	s head-specific expression in 58.	
1	C106	McEACHERN M & RI ACKRURN E "Runaway telomere elongation caused by telomerase RNA			
4	C107	MELBY, P. et al. "Quantitative measurement of human cytokine gene expression by polymerase chain reaction," J. Immunol. Meth., 1993, pp.235-244, Vol. 159			
1	C108	MERRIFIELD, R.B. "Solid phase peptide synthesis. I. The synthesis of a tetrapeptide," J. Am. Chem. Soc., July 1963, pp. 2149-2154, Vol. 85.			
1	C109	MEYERSON, M. et al., "hEST2, the Putative Human Telomerase Catalytic Subunit Gene, Is Up- Regulated in Tumor Cells and during Immortalization," Cell, August 1997, pp. 785-795, Vol. 90			
1	C110	MURRAY, In McGraw Hill Yearbook of Science and Technology, 1992, pp. 191-196, McGraw Hill, New York			
1	C111	NAKAMURA, T. et al., "Telomerase Catalytic Science, August 1997, pp. 955-959, Vol. 277	Subunit Homologs	s from Fission Yeast and Human,"	
V	C112	NAKAYAMA et al. "TLP1: A Gene Encoding a Novel Member of WD Repeats Family," Cell,	Protein Compone 1997, pp. 875-884	ent of Mammalian Telomerase Is a , Vol. 88	
	C113	NAKAYAMA, J. et al. "Cloning of a Candidate cDNA Encoding a Proteinaceous Component of Mammalian Telomerase", Molecular Biology Cell Abstracts Supp. 7, 1996, p. 875-884, 286a Section 1664			
1	C114	NATARAJAN et al. "Major histocompatibility complex determinants select T-cell receptor alpha chain variable region dominance in a peptide-specific response." Proc. Natt. Acad. Sci., Oct 1992, pp. 8874-8878, Vol. 19.			
	C115	NIELSEN et al., "Peptide nucleic acids (PNA: Drug Des., 1993, pp. 53-63, Vol. 8.	s): Potential antise	nse and anti-gene agents," Anticancer	
Examiner Signature		Chips	Date Considered	4-13-04	

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Art Unit Carla J. Myers Examiner Name Attorney Docket Number 015389-002921US

Application Number

First Named Inventor

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January 19, 2001

Thomas Cech

09/766,253

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
CH	C118	OKA, Y. et al. "Inverted terminal repeat sequence in the macronuclear DNA of Stylonychia pustulata, " Gene, 1980, pp. 301-306, Vol. 10	
\ V	C117	OLOVNIKOV, A.M., "A Theory of Marginotomy: The incomplete copying of template margin in enzymic synthesis of polynucleotides and biological significance of the phenomenon," J. Theor. Biol., 1973, p. 181, Vol. 41.	
J	C118	ORLANDI et al., "Cloning immunoglobulin variable domains for expression by the polymerase chain reaction," Proc. Natl. Acad. Sci., May 1989, pp. 3833-3837, Vol. 86	
v	C119	PASZKOWSKI, Jerzy et al., "Direct gene transfer to plants," The EMBO Journal, 1989, pp. 2717-2722, Vol. 3.	
V	C120	POTRYKUS, I. et al. "Direct gene transfer to cells of a graminaceous monocot", Mol. Gen. Genet., 1985, pp. 183-188, Vol. 199.	
1	C121	PRESCOTT, D. "The DNA of Ciliated Protozoa," Microbiol. Rev., June 1994, pp. 233-267, Vol. 58, No. 2.	
1	C122	PRICE, C.M. "Fluorescence in Situ Hybridization" Blood Reviews, 1993, p. 127, Vol. 7	<u>.</u>
1	C123	RAYMOND, E., et al.; Agents that target telomerase and telomeres; Curr. Opin. Biotechnol.; 1996; 7:583-91	
ν	C124	RHODES, C. et al. "Transformation of maize by electroporation of embryos," Meth. Mol. Biol., 1995, pp. 121-131, Vol. 55.	
V	C125	RHYU, M.S. "Telomeres, telomerase, and immortality"; J. Natl. Cancer Inst.; 21 June 1995; pp. 884-894, Vol. 87, No. 12.	
V	C126	ROBERGE, J. et al., "A strategy for a convergent synthesis of N-linked glycopeptides on a solid support," Science, July 1995, pp. 202-204, Vol. 269	
J	C127	ROMERO, D. and BLACKBURN, E. "A conserved secondary structure for telomerase RNA, " Cell, Oct. 1991, pp. 343-353, Vol. 67	
v	C128	SAMBROOK et al., Molecular Cloning, A Laboratory Manual, 1989, pp. 16.2-16.10, Cold Spring Harbor Press, Plainview NY	
1	C129	SANDELL, L. et al., "Transcription of yeast telomere alleviates telomere position effect without affecting chromosome stability, " Proc. Natl. Acad. Sci., 1994, pp. 12061-12065, Vol. 91	
7	C130	SANGER, F. et al., "DNA sequencing with chain-terminating inhibitors," Proc. Natl. Acad. Sci., 1977, pp. 5463-5467, Vol. 74, No. 12.	
V	C131	SCHARF, D. et al. "Heat stress promoters and transcription factors," Result Probl. Cell Differ. 1994, pp. 125-162, Vol. 20	

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CH	C132	SCHWARTZ, H. et al. "Telomere Reduction in Giant Cell Tumor of Bone and with Aging"; Cancer Genet Cytogenet; 1993; pp. 132-138, Vol. 71, Elsevier Science Publishing Co., Inc., New York, U.S.A.	
1	C133	SHAMPAY, J. and BLACKBURN, E. "Generation of telomere-length heterogeneity in Saccharomyces cerevisiae," Proc. Natl. Acad. Sci., Jan. 1988, pp. 534-538, Vol. 85	
1	C134	SHEEN, F. and LEVIS, R. "Transposition of the LINE-like retrotransposon TART to Drosophila chromosome termini," Proc. Natl. Acad. Sci., Dec. 1994, pp. 12510-12514, Vol. 91	
V	C135	SINGER, M. & GOTTSCHLING, D. "TLC1: Template RNA Component of Saccharomyces cerevisiae Telomerase," Science, Oct. 1994, pp. 404-409, Vol. 266	
V	C136	SINGER, M. "Unusual Reverse Transcriptases", Journal of Biological Chemistry; 1995, pp. 24623-23626, Vol. 270, No. 42	
V	C137	SMITH, J. & YEH, G. "Telomere Reduction in Endometrial Adenocarcinoma"; Am. J. Obstet. Gynecol.; Dec. 1992; pp. 1883-1887, Vol. 167, No. 6	
V	C138	STARLING, J.A. et al., "Extensive telomere repeat arrays in mouse are hypervariable," Nucleic Acids Res., 1990, pp. 6881-6888, Vol. 18, No. 23	
1	C139	SWANTON, M. et al., "Arrangement of Coding and Non-coding Sequences in the DNA Molecules Coding for rRNAs in Oxytricha sp.," Chromosoma, 1980, pp. 203-215, Vol. 77	
1	C140	TAIT, J. et al. "Structure and Polymorphisms of the Human Annexin III (ANX3) Gene", Genomics, 1993, pp. 79-86, Vol. 18, No. 1	
,	C141	TOMMERUP, H. et al., "Unusual chromatin in human telomeres," Mol. Cell. Biol., Sept. 1994, pp. 5777-5785, Vol. 14, No. 9.	
V	C142	TRASK, B. "Fluorescence in situ hybridization: application in cytogenetics and gene mapping," (1991) Trends Genet., May 1991, pp. 149-154, Vol. 7, No. 5	
1	C143	VERMA et al., "Human Chromosomes: A Manual of Basic Techniques," 1988, Pergamon Press, New York NY	
V	C144	WATSON, J.D. "Origin of Concatemeric T7 DNA," Nature New Biol., Oct. 1972, pp. 197-201, Vol. 239	
V	C145	WEINRICH, S. et al., "Reconstitution of human telomerase with the template RNA component hTR and the catalytic protein subunit hTRT," Nat. Genet., December 1997, pp. 498-502, Vol. 17, No. 4.	
1	C146	WELLINGER, R. et al., "Origin activation and formation of single-strand TG1-3 tails occur sequentially in late S phase on a Yeast linear plasmid," Mol. Cell. Biol., July 1993, pp. 4057-4065, Vol. 13, No. 7.	
7	C147	WELLINGER, R. et al., "Saccharomyces Telomeres Acquire Single-Strand TG1-3 Tails Late in S Phase," Cell, 1993, pp. 51-60, Vol. 72	
Į į	C148	Whitehead Institute/MIT Center for Genome Research, Genetic Map of the Mouse, Database Release 10, April 28, 1995	

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CN	C149	WIGLER, M. et al., "Transfer of purified herpes virus thymidine kinase gene to cultured mouse cells," Cell, 1997, pp. 223-232, Vol. 11	
10	C150	WIGLER, M. et al., "Transformation of mammalian cells with an amplifiable dominant-acting gene," Proc. Natl. Acad. Sci., June 1980, pp. 3567-3570, Vol. 77, No. 6	
y	C151	WINTER, G. & HARRIS, W. "Humanized Antibodies", Trends Pharmacol. Sci., May 1993, pp. 139- 143, Vol. 14.	
1	C152	WINTER, G. and MILSTEIN, C. "Man-made antibodies," Nature, Jan. 1991, pp. 293-299, Vol. 349	
U	C153	WIRTH, URS et al; "Immediate-Early RNA 2.9 and Early RNA 2.6 of Bovine Herpesvirus 1 Are 3' Coterminal and Encode of Putative Zinc Finger Transactivator Protein"; <i>Journal of Virology</i> ; May 1992; pp. 2763-2772, Vol. 66, No. 5.	
J	C154	WRIGHT, J. et al., "Saccharomyces telomeres assume a non-nucleosomal chromatin structure, " Genes Develop., 1992, pp. 197-210, Vol. 6	
V	C155	YU et al., "In vivo alteration of telomere sequences and senescence caused by mutated Tetrahymena telomerase RNAs," Nature, March 1990, p. 126-132, Vol. 344	
1	C156	ZAHLER and PRESCOTT, "Telomere terminal transferase activity in the hypotrichous ciliate Oxytricha nova and a model for replication of the ends of linear DNA molecules," Nucleic Acids Res., 1988, p. 6953, Vol. 16	
1	C157	ZAKIAN, Telomeres: Beginning to Understand the End," Science, 1995, p. 1601-1607, Vol. 270	
a	C158	ZAUG, A. et al., "Catalysis of RNA Cleavage by a Ribozyme Derived from the Group I Intron of Anabaena Pre-tRNA ^{LBU} ," <i>Biochemistry</i> , 1994, pp. 14935-14947, Vol. 33	
	C159	ZAUG, A., et al., "Method for determining RNA 3' ends and application to human telomerase RNA", Nucleic Acids Research, 1996, pp. 532-533, Vol. 24, No. 3.	

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